

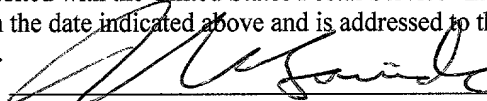
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PATENT

5297/148

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Divisional Application of

BRIAN H. SILVER and LARRY D. ANNIS

Prior Examiner: C. Freay

from S.N. 09/055,101 (Filed April 3, 1998)

Group Art Unit: 3746

Title: DIAPHRAGM PUMP AND PUMP
FOR DOUBLE-BREAST PUMPING

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Please amend the application as follows.

In the Specification:

In the Related Patent Applications at page 1 lines 3-4, please replace the current text with, "This patent application is a divisional application from U.S. Application 09/055,101 (filed April 3, 1998, to be issued as U.S. Patent No. 6,257,847 on July 10, 2001) which is a continuation-in-part of U.S. Serial No. 08/510,714 (filed August 3, 1995), now U.S. Patent No. 5,776,098 (issued July 7, 1998)."

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In the Claims:

Please amend the claims as follows, prior to calculating the claim fees.

Please cancel Claims 1-22 and 24-39.

Please enter the following amended Claim 23.

23. (Amended) A pump mechanism for a breastpump comprising:

a motor drive;

a first and a second expansible chamber, each said expansible chamber having an element which is movable relative to a base member with said element and base member being generally air sealed with respect to each other so as to form a variable volume between them by movement of said element relative to said base member, with an outlet in communication with a respective variable volume; and

a drive train being connected to said motor drive and to said first and second expansible chambers to move each expansible chamber element relative to a respective base member, wherein said element is a flexible diaphragm and said base member is a rigid member to which said diaphragm is mounted and having a respective outlet formed in said rigid member, said diaphragm being movable in relation to said rigid member by the drive train, which includes an eccentric which is rotated by said motor drive, with a puller mounted to move with said eccentric and connected to a yoke, the diaphragms of said first and second expansible chambers being connected to said yoke, so as to expand and contract the volumes of said expansible chambers in tandem as said eccentric is rotated.

Please add the following new claim:

40. (New) The pump mechanism according to Claim 23 further comprising:

a vacuum regulator device on each base member for adjusting a negative pressure generated when the element is moved away from the base member, said vacuum regulator comprising a disk-shaped rotary valve member having a generally planar inboard surface and mounted for rotational movement on said base member with said generally planar inboard surface against said base member, an aperture being formed through said valve member, and at least one hole formed

through said base member in communication with said volume, said valve member having a first position wherein said aperture and said hole are aligned to place said volume in communication with atmosphere, and a second position wherein said aperture and said hole are not aligned such that the valve member closes the hole from atmosphere, said valve member adapted to be manipulated by hand to effect said rotational movement.

REMARKS

Claim 23 is amended to encompass a breastpump mechanism in which at least two expansible chambers are expandable and contractible in tandem. Claim 40 is added to further reflect the mechanism of Claim 23, with a vacuum regulator. The amendments merely reflect the subject matter of the present divisional application and is not intended to overcome any prior art.

Respectfully submitted,



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Dated: July 9, 2001

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Marked-up Claim

23. (Amended) A pump mechanism for a breastpump comprising:

a motor drive;

a first and a second expansible chamber, each said expansible chamber having an element which is movable relative to a base member with said element and base member being generally air sealed with respect to each other so as to form a variable volume between them by movement of said element relative to said base member, with an outlet in communication with a respective variable volume; and

a drive train being connected to said motor drive and to said first and second expansible chambers to move each expansible chamber element relative to a respective base member, wherein said element is a flexible diaphragm and said base member is a rigid member to which said diaphragm is mounted and having a respective outlet formed in said rigid member, said diaphragm being movable in relation to said rigid member by the drive train, which includes an eccentric which is rotated by said motor drive, with a puller mounted to move with said eccentric and connected to a yoke, the diaphragms of said first and second expansible chambers being connected to said yoke, so as to expand and contract the volumes of said expansible chambers in tandem as said eccentric is rotated.